MULTIMEDIA UNIVERSITY

STUDENT ID NO

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FINAL EXAMINATION

TRIMESTER 2, 2022/2023

BDA3024 – ADVANCED DATA ANALYTICS FOR BUSINESS

(All sections/Groups)

11 JULY 2023
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 4 pages with 2 sections.
2. Attempt **ALL** questions in Section A and Section B. The distribution of the marks for each question is given.
3. Please write all your answers for Section A and Section B in the Answer Booklet provided.

SECTION A: Structured Questions (70 Marks)

QUESTION 1

(a) Explain the concept of primary key (parent) and foreign key (child) in database. (10 marks)

(b) Explain the different types of relationship (cardinality) that may appear by using primary key (parent) and foreign key (child). (15 marks)

(c) For each relationship explained in (b), provide **ONE (1)** example how each relationship can happen. (15 marks)

(Total: 40 marks)

QUESTION 2

(a) List and describe the **THREE (3)** components of business analytics. (15 marks)

(b) Explain how Microsoft Power BI desktop helps to achieve the three components in (a) by using **ONE (1)** example of Microsoft Power BI visual that fulfils each component. (15 marks)

(Total: 30 marks)

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SECTION B: Case Study (30 Marks)

Software as a Service: ERP by the Hour

As you know by now, an organization's IS infrastructure is not simple to construct or maintain but is a complex infrastructure of servers and databases useful for managing large amounts of information. With advances in cloud computing, software as a service (SaaS) has appeared as a model of IS infra structure and software and is rapidly changing the way many organizations do business. SaaS is a way for organizations to use cloud-based Internet services to accomplish the goals that traditional IS infrastructure and software models have in the past. SaaS allows software application vendors to deploy their products over the Internet through web - based services. SaaS customers pay to use applications on demand, giving them the freedom to access a software ser vice only when needed. Applications and software are developed, hosted, and operated by SaaS vendors, and customers are charged on a pay-per-use basis. Once the customer's " license " expires, the customer no longer has to carry the cost of the software. If a future need for the software arises, the customer simply orders it again to have access. SaaS products can be licensed for single or multiple users within the organization, making them flexible and scalable.

Using the SaaS model has several advantages. Through SaaS applications, organizations can move their data storage into the cloud, reducing the cost of buying storage and diminishing the risk of catastrophic data loss, as it is in the vendor's financial interest to keep the services it provides running at peak performance or risk losing customers to another vendor. In addition, SaaS allows for less resource expenditure on long-term software licensing because an organization can get what it needs when it needs it. SaaS utilization also allows organizations to become more productive outside the physical confines of their buildings. Because SaaS services are in the cloud, employees can access services from remote offices or from their mobile devices.

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One of the main disadvantages of SaaS is that customers must give up some autonomy over their applications and data. Some organizations require specialized software solutions and are used to customizing software in-house to meet their needs. Although some SaaS vendors are beginning to offer customizable solutions, the problem is still a roadblock for some. Computing off-site also means that security may be an issue, as organizations to keep their data and their secrets in the cloud, such concerns are another roadblock that organizations must overcome in order to use SaaS products.

These disadvantages aside, organizations are reaping the benefits of SaaS, utilizing them for human resources activities, e-mail services, collaboration efforts, storage solutions, and financial tasks such as billing, invoicing, and timekeeping. In addition to more general-purpose applications, many organizations are deploying ERP capabilities via SaaS vendors. And the growth of the SaaS industry doesn't appear to be slowing. In fact, a recent study by Gartner found that the global SaaS market is projected to grow from US $ 49 billion in 2015 to US $ 67 billion in 2018.

Companies like Google, Amazon.com and Microsoft have become well-known SaaS vendors offering a range of services to organizations, including shared-document management, communication services, cloud-based e-mail, calendaring, photo and video sharing, web and intranet page management, and data storage services, just to name a few. Given the challenges and issues associated with implementing in-house enterprise systems, ERP vendors are increasingly offering their software as a ser vice as well. For example, SAP offers SAP Business by Design, an integrated on demand ERP solution for small and medium-sized enterprises. Similarly, Microsoft offers its Dynamics customer relationship management system as a service, and Oracle offers the subscription-based Oracle On-Demand customer relationship management solution.

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As more organizations continue to adopt SaaS services as a way of carrying out their day-to-day activities, vendors will continue to upgrade and expand the available technologies for use. The question of whether organizations will adopt SaaS services has, for the most part, been answered. The question has now become how much of their business they will put in the cloud.

(Source: Chapter 7: Enhancing Business Process Using Information Systems, p331)

QUESTION 1

(a) Would you trust an external provider with your organization's data? Why or why not? (5 marks)

(b) What would be needed to raise your trust in the reliability, security, and privacy of the data? (5 marks)

(c) What are the potential drawbacks of using a relatively simple in-house database with limited capabilities versus a more robust, SaaS database solution? (5 marks)

(d) Describe **FIVE** (5) benefits of a SaaS database that outweighs its limitations. (5 marks)

(e) Shall most applications be purchased or obtained through a SaaS relationship? Why? Provide **TWO (2)** reasons. (10 marks)

(Total: 30 marks)

End of Paper